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Understanding educational care farms as outdoor learning interventions for children who have dropped out of school in the Netherlands

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ABSTRACT

When children drop out of school, either temporarily or permanently, this poses a significant problem for both children and society. In the Netherlands, care farms offering care-education programs for school dropouts are emerging. While there is evidence for their effectiveness, models explaining how such outdoor interventions may facilitate positive developments of children and their return to school are lacking. Using the generic Context-Intervention-Mechanisms-Outcome Model as an overarching deductive frame, this study inductively examines how care-educational programs facilitate the positive development of children who have dropped out of school. Focusing on nine educational care farms, we conducted observations and interviews with children, parents, teachers, and farmers. We conclude that the outdoor learning intervention in combination with the underlying farm context enables children to enjoy rest, freedom, tailored education, and a feeling of acceptance. These mechanisms support children to develop themselves, particularly regarding their socio-environmental functioning.

KEYWORDS

Care farms; case study; CIMO Model; outdoor learning; school dropout

1. Introduction

Education is a key determinant and prerequisite to participate in society in a sustainable and meaningful way. Despite the United Nations' call to ensure education for all children (United Nations, *n.d.*), a substantial number of children drop out of primary or secondary schools (UNESCO, 2005). Not going to school can lead to several problems in adulthood, such as mental (Hjorth et al., 2016), social (Tramontina et al., 2001), and occupational problems (Bäckman, 2017). Therefore, it is essential that children do not drop out of school, and that if they do, that this is temporary.

The Netherlands also struggles with children dropping out of school, either temporarily or permanently. This is why the Dutch government enacted a new pledge in 2016, the so-called *home stayers pact*, aiming for nil children dropping out of school in 2020. If children do drop out, the pledge states, no child should be at home for longer than three months without receiving tailored education and care to prevent a permanent dropout. Several ministries, such as the Ministry of Education, Culture and Science, called for this new policy, as did several other critical stakeholders, like the Organisation of Dutch Municipalities. However, while the absolute number of children *returning* to school increased after the pledge was installed, the number of children *dropping out* also increased: from just over 3,200 in 2014 to almost 4,800 in 2019 (Rijksoverheid, 2016).

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A recent systematic review and meta-analysis showed that causes of dropping out are highly complex and often intertwined. They range from external and internal problems of the child, to a low parent-school involvement, a negative attitude towards school, substance abuse, experiencing learning difficulties, and a history of grade retention (Gubbels, van der Put, & Assink, 2019). This complexity of causes urges the call for a tailored approach to enable children to successfully return to school, which thus far has received little attention in either research or policy. However, the number and diversity of initiatives for children not attending school is increasing: we can learn from their experiences (Van Houten, Van Eslwijk, & Van Deth, 2019).

Educational care farms form one such group of initiatives. Dutch parents and schools increasingly approach care farmers to see if they can offer education to children who have dropped out of school (Hassink et al., 2020). Several of these children face severe mental or psychiatric problems—often in combination with problems in the home situation (Van Binsbergen, Pronk, Van Schooten, Heurter, & Verbeek, 2019). As care farms can combine education with care, they potentially provide a good fit. Moreover, they offer an alternative educational environment, which is important for children facing problems within the regular school context (Hassink et al., 2020). In this paper we define these educational care farms as *outdoor learning interventions* providing education and care in a non-school setting with the aim to reintegrate youngsters into the regular school system (Hassink et al., 2020). They should be distinguished from excursions to, or lectures at, a farm for regular school classes.

Care farms offering care-education programs to children who (temporarily) cannot participate in primary or secondary schools is a relatively new phenomenon, so the characteristics of these programs have not yet been well described. Moreover, theories or models explaining how such care-education programs may facilitate a positive development of children and the return to school process are often lacking. Such description and theoretical understanding is needed for the intervention to become accepted among key stakeholders (e.g. regular schools, policy makers, governmental bodies) (Hassink et al., 2020). The aim of this paper, therefore, is to examine:

- (1) The context and characteristics of the care-education arrangements on care farms;
- (2) The mechanisms underlying these interventions leading to a positive development of children who have dropped out of school;
- (3) The outcome of these interventions.

In the next section we shortly introduce the Dutch school system before presenting what the literature says about outdoor learning, specifically for children who are at risk of dropping out. We then describe our methods. We present our results by using the CIMO-model (Context, Intervention, Mechanism and Outcome (Denyer, Tranfield, & van Aken, 2008)). We end with discussions on our findings and their practical implications, and conclude that both the specific farm environment and the specific educational programs are essential in making this outdoor learning intervention work.

2. Outdoor learning interventions for children who drop out of school

Most children in the Netherlands start school at the age of four, although it is only mandatory from five years onwards. The first two years of school are focused on socio-emotional skills and they are meant to prepare children for learning how to read, write and calculate. In the third grade, when children are six years old, education is geared specifically towards these skills. Unlike educational farms, which mainly address the socio and emotional development of children (Hassink et al., 2020), mainstream schools work with national curricula that primarily focus on cognitive development. Dutch children are considered 'dropouts' when they have not attended school for at least three months (Van Binsbergen et al., 2019; Rijksoverheid, 2016). As the educational care farming sector is still under development, there is currently no clear

structure that defines how children are referred to educational care farms: in practice this ranges from regular schools having connections with individual farms to municipalities forwarding children for whom they see no other option (Hassink et al., 2020).

Children with severe socio-emotional problems, like internalizing and externalizing problems, attention deficit disorders, autism or problematic home situations have a larger risk of leaving school than children without such problems. These children benefit from personal attention and an environment with little stress where they feel acknowledged and seen (Van Binsbergen et al., 2019). A limited-stress outdoor location with a personal and welcoming atmosphere where children can participate in useful activities and gain positive experiences has been described as a setting where children with severe mental problems can recover (Hassink, De Meyer, van de Sman, & Veerman, 2011; Veerman, De Meyer, Hassink, Berghuis, & Kienhuis, 2016). Indeed, research in Norway and Belgium reported on positive experiences with care-education programs on farms (Jolly & Krogh, 2010; Rombaut, 2011; Smeds, Jeronen, & Kurppa, 2015).

The literature recognises different types of outdoor learning. Romar, Enqvist, Kulmala, Kallio, and Tammelin (2019, p. 28) define it shortly as 'purposeful and planned learning experiences in the outdoors', where Price (2019, p. 316) is more extensive with 'an approach to learning that occurs predominantly outside of the classroom, encompasses a strong emphasis on working with others and includes practical activities that provide opportunities to learn about the self, others and the natural environment'. Educational care farms can be considered as offering outdoor learning: learning takes place in the outdoors and practical activities for planned learning are included. However, educational care farms also show differences with other outdoor learning interventions as described in the literature: education at the care farm is not a one-time activity or a time-defined program. Rather, care farms offer longer-term education to children with social, emotional, learning or behavioural problems. This education is provided in a farm environment where the outdoors is always close, as are opportunities for outdoor learning. However, the care-education programs usually also involve indoor learning, sometimes involving regular school books. Notably, this indoor learning is different from traditional classroom teaching at a regular school, for instance regarding methods used and group size. As such, outdoor learning at an educational care farm is not 'complementary' to a regular school program, but is another concept altogether: a specific care-education program in a farm setting.

Educational care farms focus on children with social, emotional, learning and behavioural problems leading to school dropout, comparable to what Price (2019) calls young people with social, emotional and behavioural difficulties. While research on outdoor learning for this group is limited (Price, 2019), several studies focus on the role of the outdoors and nature as a complementary concept for (regular) education. In their systematic review, Roberts, Hinds, and Camic (2020) showed that 'outdoor programs' such as forest schools, wilderness expeditions and outdoor education classes contributed to multiple positive outcomes like increases in the child's resilience, self-esteem and confidence, and reduced stress levels. Norðdahl and Einarsdóttir (2015) found that outdoor environments that are experienced as secure, offer opportunities to be in contact with others, enjoy nature, find or create shelters, explore nature and engage in physically challenging behaviour. Research by Veerman and colleagues (2016) reveals that children perceive outdoor learning environments as offering different learning opportunities than indoor environments. The work of Price (2015, 2019), who studied an outdoor learning program tailored to students with social, emotional and behavioural difficulties, shows that participation in outdoor learning can enhance social and emotional learning skills, improving educational outcomes and life experiences. Finally, students show higher levels of physical activity in outdoor learning environments than in traditional teaching (Romar et al., 2019).

Studies focusing on children's *preferences* for outdoor activities and surroundings in the outdoor school environment show that children enjoy being outside more than inside (Norðdahl & Einarsdóttir, 2015), that they prefer the outdoors as their learning environment (Sjöblom & Svens,

2019), and that they enjoy the practical orientation in outdoor settings (Romar et al., 2019). Price (2015) found students to be looking forward to the sessions. They showed improved attendance and punctuality, made more effort to attend school, and behaved better during the lessons.

3. Methods and materials

3.1. Research context

This paper is based on a number of studies that were conducted within a larger Science Shop project of Wageningen University, which focused on experiences on educational care farms, and barriers and facilitators regarding their acknowledgement (see (Hassink et al., 2020) and (Veen & Pijpker, 2020) for more information about this project). The Science Shop project was commissioned by a network of educational care farms in the Netherlands, which aimed to enhance the visibility of these farms among critical stakeholders, such as municipalities and regular schools, in the Netherlands. The field work was conducted between March 2019 and April 2020.

The paper largely builds on two specific studies that were part of the larger project. Together these two studies considered a total of nine educational care farms, creating a multi-case study design. The farms share common characteristics (e.g. offering both care and education to children), as well as unique differences (e.g. group size), thereby allowing to examine both mechanisms in different outdoor learning contexts and overarching mechanisms. Farms selected for the research were mostly involved in or associated with the network commissioning the overall study. More information on these farms follows in the results section.

3.2. Research methods

We used participatory observations and interviews to study the nine farms, particularly focusing on the experiences of the children at the farms. The data was collected by two master students of Wageningen University,¹ closely supervised by the authors. The first student focused on the first seven farms, while the second student focused on the last two: the first student's work was thus more extensive, where the second student's work was more in-depth.

The students interviewed 15 children, 5 parents, 10 teachers, and 6 farmers (see Table 1: please note that more information about the children is presented in the results section). As we do not perform a gender analysis the table does not mention genders. We interviewed both boys and girls (equally divided). Most—but not all—teachers, parents and farmers were female. The first student used a predefined interview guide. The second student used creative methods, like drawings and photo voice, to facilitate a reflexive dialogue with the children. Interviews with children focused on their experiences of being on the farm and how the programs influenced their behaviour. Interviews with parents specifically focused on the effects of the care-education programs on their children. The

Table 1. Interviews and observations (interviews were conducted face-to-face, unless stated otherwise)

	Teachers	Parents	Farmers	Children	Observations
Farm 1	Teacher (phone)	-	-	-	-
Farm 2	Teacher	Parent	-	2 Children	4 days
Farm 3	Teacher	-	Farmer (phone)	-	1 day
Farm 4	Two teachers	Parent (phone)	-	Child	1 day
Farm 5	Teacher	Parent	-	2 Children	1 day
Farm 6	Two teachers	-	Farmer	Child	1 day
Farm 7	-	-	Farmer (phone)	-	-
Farm 8	Teacher	Parent	Owner/ teacher, care coordinator	5 Children	5 days
Farm 9	Teacher	Parent	Owner/teacher,	4 Children	5 days
TOTAL	10 respondents	5 respondents	6 respondents	15 respondents	18 days
9 farms	(8 interviews)				(7 farms)

focus of the interviews with teachers and farmers lay on understanding the programs and underlying ideas as such. Most interviews—including all those with children—were conducted face-to-face (83%), the rest were employed over the phone (17%).

In addition, the students spent a total of eighteen days observing daily life at the farms. Observations were conducted without predefined observation criteria, which allowed the observations to be flexible and continuously adjustable to the specific context. Finally, 5² farms were willing to provide data about the number of children entering and leaving the care-education programs.

3.3. Ethical considerations

As we interviewed vulnerable children, ethical responsible behaviour was extremely important (Morrow & Richards, 1996). Prior to data collection, ethical approval was provided by the Social Sciences Ethics Committee of Wageningen University and Research in 2019 and we gave specific attention to working with the children in a respectful, correct, careful and honest way. The first student built rapport by spending time with the children playing and talking prior to the interview, and in some cases interviewed children by walking around the farm. The second student used creative methods as explained above, and built rapport and trust with the children by spending a week each at both of the farms she studied: every day she accompanied a child during the care-education program, whom she later interviewed if the child was comfortable with that.

Children to be accompanied and/or interviewed by the students were selected by the care farmers or teachers, based on their view of which children would feel comfortable in an interview and would be able to express their thoughts. All children participated voluntarily, based on verbal consent and after the interviewers explained the purpose and structure of the interview. Children could take a break from the interview whenever they wanted (although interviews were in general short). Parents of all participating children signed informed consent forms. Other interviewees (parents, farmers, teachers) agreed to participate through written informed consent forms. All transcripts were anonymised.

3.4. Data analysis

For the purpose of this paper, we analysed the original interview transcripts using the Context-Intervention-Mechanism-Outcome (CIMO) configuration approach as an overarching deductive generic frame. The CIMO-logic is derived from the principles of Realistic Evaluation (Pawson & Tilley, 1997) and aims to describe the following predefined characteristics (Denyer et al., 2008), as applied to our case:

- Context: characteristics of each pupil at the start, the setting of the farm and collaboration between the farm and the educational sector
- Intervention: description of the care-education program
- Mechanisms: key elements of the program leading to a positive development
- Outcome: socio-emotional and cognitive development of pupils and return to school.

Interviews with the different groups of interviewees (children, parents, teachers, farmers) were analysed separately, to inductively specify the CIMO aspects of the outdoor learning intervention. Following the thematic analysis approach, coding was first done inductively by means of open, axial and selective coding (Fereday & Muir-Cochrane, 2006), after which overacting themes were divided deductively in the CIMO aspects. Interviews with the different interviewee groups showed similar results: in the results section our starting point is always the interviews with children, which we compare and supplement with the interviews with other interviewees. Observational data was analysed and used for a general understanding of life at the farms, comparison and triangulation: observations generally confirmed findings from interviews.

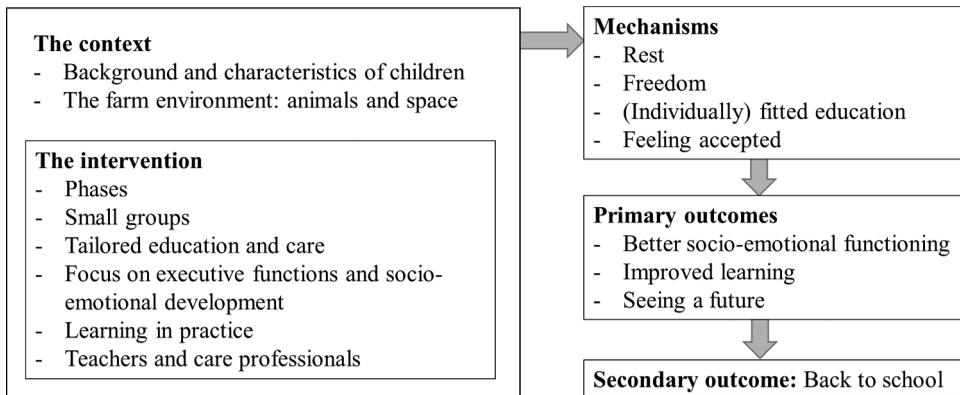


Figure 1. Graphic representation of the CIMO model filled out for the educational care farm

4. Results

In this section we discuss our understanding of how the CIMO model can be filled out for outdoor learning on care farms for children who have dropped out of school. We have summarised these findings in [Figure 1](#). Starting our analysis from the interviews with children, supplemented with the other interviews and observations, we sketch the context of the farm, the intervention implemented, the mechanisms that (can) make this intervention work, and the outcomes to which this leads. While the CIMO model is useful in unravelling how and why an intervention may be successful, we want to stress that in reality there is a co-creation of several elements. Hence, contextual factors (e.g. the green space) and characteristics of the children (e.g. difficulty to concentrate), and elements of the intervention itself (e.g. attention for skills) can trigger multiple mechanisms (e.g. freedom), resulting in primary outcomes (e.g. enjoying school again) and secondary outcomes (e.g. back to school). While these different elements can be hard to disentangle, attempting to do so increases the understanding of the added-value of care-education programs on farms.

4.1. Context of the outdoor learning intervention

4.1.1. Background and characteristics of children

The fifteen children we spoke to, representing six farms, range in age from 9 to 19 years old (both average and median age is 12).³ They joined the farm between three weeks and five years ago, but generally had stayed at the farm for a few months up to a year and a half. The number of days they visit the farms vary: about half the group does so every day, the others three or four days. Children who do not come every day either stay at home when they are not at the farm, or go to school. One of the children visits another farm on that day. Most of the farms offer a care program ('daytime activities') for children, adults or elderly with specific needs as well as the care-education program: some of the children interviewed visit that care program (either or not in combination with visiting a regular school on other days), others the care-education program, or they are involved in both. Some children also spend time at the farm in the weekend (including sleepovers).

The children originate from different types of schools (although more often special education schools). While their reasons for visiting the farms vary, all of them are struggling with various issues—not just education. Their behaviour can be both externalising (e.g. anger) or internalising (e.g. anxiety). Children often face problems in dealing with other children or may think poorly of themselves. Some have difficulty concentrating and can't keep up at school. Children are often frustrated and/or not prepared to do any work. They may not be able to control their impulses, have little empathetic feelings or detach themselves from others. Other children left school because they

were bullied, or they are dealing with traumas. Some are diagnosed with autism or ADHD, others struggle with severe depressions, have performance anxiety or are burnt out. Some children are or used to be in unsafe family situations. Children who would be aggressive against other children or animals are usually not accepted at the farms. Some children had not been going to school for months before coming to the farm. Excerpts from interviews with parents illustrate the diversity of reasons for visiting the farms, and make the problems the children (and their parents) face more real:

'The noise in class, there was not enough time to give him the supervision he needed. The social part was very difficult for him, and teachers do not really have time to help children with that.' (F9P⁴)

'She didn't go to school for almost a year. She was very depressed, suicidal.' (F8P)

'There wasn't another option really. The school he attended could not manage him. He was almost suspended.' (F4P)

Children themselves were also asked to explain why they visit the farm:

'I used to run away, I often thought [school work] was difficult. I would get angry just like that.' (F9C1, 11 years old)

'I didn't really drop out ... at a certain moment I just didn't go anymore.' (F9C3, 17 years old)

'The education, the children, because they were not nice to me (...) I don't know, because of my long hair perhaps.' (F9C4, 10 years old)

4.1.2. The farm environment: animals and space

All the farms studied keep animals, like horses, pigs, alpacas, dogs, rabbits and Guinea pigs. These animals are used in different ways. First, children cuddle them, or take them out for a walk, which mostly works comforting and creates literal space (being away from the learning environment and other children). Observations show that animals are sometimes also allowed indoors for comfort. Second, animals need to be groomed and fed and their stables cleaned. These are farm tasks that the children engage in and learn from (e.g. responsibility). Third, the animals and the farm environment are used purposely in education in different ways: working with animals enables the school work to become more concrete or visible (for instance when using calculations to feed the pigs) and some children do their reading while horse riding, as the motion is said to help them concentrate. Fourth, some farms employ horses methodically to train or coach children. Farmers indicate that horses mirror behaviour, can serve as symbols and children feel supported by horses (F9T). Besides animals, farms also offer literal space and opportunities for (physical) activities as building stables, digging holes, jumping on trampolines and playing on playgrounds: programs contain several outdoor activities.

4.2. The intervention: the care-education programs

While there are differences between the diverse programs that the farms offer, the similarities are large. Children interviewed all describe a schedule consisting of set times for education, farm activities (e.g. chores, spending time with animals), games, free time, and in some cases learning with horses. Education in the form of learning from school books is mostly limited to either one or two 'learning moments' of about fifteen minutes to an hour each. Reflection—per day, on a weekly basis or based on specific behaviour—plays a role in all programs.

4.2.1. Phases

The care-education programs generally exist of three phases. These three phases are not based on any explicit model, but seem to have developed rather organically on all farms studied. During the first six weeks children are given time to adjust and get used to life at the farm. There is not much

emphasis on school tasks: attention goes to getting at ease and feeling at home. In the second phase school tasks are being picked up and time is dedicated to subjects like reading and maths. In the last phase children are being prepared to go back to school.

I start relatively simply to have them adjust a little. (...) It really just starts with looking and testing to find out what really goes wrong? Why doesn't it work out at a regular school? (...) Then I focus on what goes well. And when a child relaxes and starts enjoying things again, then we start working on things that are not going so well yet. (F1T)

4.2.2. Small groups

School work is often offered in small groups of up to five children. While some children with severe concentration difficulties get private lessons, other farms prefer groups of at least two children in order to imitate a school setting. One farm works with groups of around twelve children for certain activities: the farm then brings children from the care program and from the care-education program together.

4.2.3. Tailored education and care

Due to these small group sizes, it is possible to tailor education and care for each child and give ample personal attention. Hence, whereas the farms work with clear overall schedules, these are generally adjusted to meet each child's personal learning goals and possibilities. Moreover, within these timetables, there are several time slots during which children can pick an activity of choice. Within set activities—arts class, chores—children also get to choose between options. Children are also stimulated to come with own suggestions or develop their own projects. As a result, education is very individually targeted. Teachers take time to get to know the child, to understand their strength and difficulties, and to adjust education accordingly. Each child has his or her personal learning goals based on their specific needs and capacities. These goals generally change over time, initially mainly focusing on social-emotional aspects and later on school-related subjects like reading and mathematics. Farms have their own ways of defining learning goals for/with children. It is often a team effort of the teachers, the parents, and the school (if involved), and from a certain age onwards, the child him- or herself. This customized education is also by the finding that there is a large diversity in educational programs at the farms, concerning the number of days children visit the farm, the number of educational hours during those days and whether or not children also attend a school or a care-only program or stay one or more days at home.

When other things are going on (...) his head is full. He gets distracted easily and he is less willing to work, or he is more easily frustrated and he gets angry. Then I do other things. (...) I search for something that is closer to him, in which he can lose himself. (F3T)

4.2.4. A focus on executive functions and socio-emotional development

The programs give ample attention to executive functions: their focus lies first on socio-emotional development. Children play 'socio-emotional games' focused on how to interact with others, cook, dance, get various creative assignments including photography, and engage in projects on various topics. Teachers explain that this prepares children for their future life. Moreover, it gives them positive experiences, and is often close to their interest, so that they can 'lose themselves in a topic' and learn how to concentrate, focus their attention, practice patience, develop trust and allow themselves to make mistakes (F3T). In that sense, the programs are mostly about becoming self-reliant and socially skilled (F6T), and aim to help children feel better about themselves and learning:

It is about wellbeing, self-confidence. Learning is second place: you cannot learn if you do not get the space in your head. (F4T)

After having spent some time at the farm, when children are more at ease and behaviour is improving, there is more attention to learning in the more traditional sense of the word. Subjects taught are Dutch, writing, spelling and mathematics, sometimes supplemented with history or biology. Most farms use books from the schools that the children came from. Others work with a selection of books received from different schools. All farms supplement this with their own assignment sheets, or they use materials found online. Some farms do not work with material from school because they want to keep the children away from anything that reminds them of school: they start working with school materials only when the child is preparing to return.

We often get the materials from the school [where the kid is registered]. (...) We usually translate those lessons to lessons in which you learn while moving.' (F2T)

I hardly use it [materials from school] because that is where they are usually struggling with. (F1T)

4.2.5. Learning in practice

The farm environment allows for learning in practice, so that, according to one of the care farmers, *'as soon as you arrive at the farm, you're in development'* (F8F2). Learning at the farm is thus more practical than in school, for instance when children read a machine's manual that is not available in Dutch, but in English. In some cases the farm even offers possibilities to learn a trade, as horticulture or woodworking. Most children do not recognise these other ways of learning and only refer to the sessions with school books as education. Although two children state that you learn differently *'by doing'* (F8C1), or *'experiencing'* (F8C2), another child states *'You don't really learn differently, you get more guidance'* (F9C3), and a fourth child responds to the question how education at the farm compares to that at school: *'the books are different'* (F9C4).

4.2.6. Teachers and care professionals

Staff at the farms consists of both teachers and care professionals. All but one of the teachers interviewed are trained as such: they have qualifications to teach in primary school, secondary school and/or higher education, either regular or specialised. Some are specialised in green education such as animal care, or they are trained horse therapists. Several (also) have a background in care: they have worked in psychiatry, or are trained coaches. One of the teachers is trained in animal management, majoring in care farming. Three of the four farmers we spoke to are also trained teachers: all four of them started as care farmers, adding education later. Not all education is given by trained teachers, however: in some cases school work is supervised by other mentors.

4.3. Mechanisms

Most children interviewed appreciate and enjoy their time at the farm. In their explanations of why they do so, four main mechanisms appear. These mechanisms are facilitated by the intervention in the specific farm context. In the text below we mention, where possible, those elements of the intervention that enable a certain mechanism to take place. Important to note is that while the mechanisms appeared from our analyses of the interviews with children, the interviews with teachers confirmed them.

4.3.1. Rest

The first mechanism concerns what in Dutch is called *'rust'* and which translates to *'rest'*, *'an absence of pressure'*, or *'quietness'*. All but two children mention that they experience this rest. It often results from the animals giving children peace of mind when they are upset,⁵ and relates to the (green and natural) space around the farm which is considered peaceful. Rest is also an effect of the smaller groups in which education is received so that there is less distraction from other children.

Interviewer: 'What do the animals at the farm mean to you?'

Child: 'Rest and peace' (F9C1).

Interviewer: 'Do you like the surrounding?'

Child: 'Yes'

Interviewer: 'Does it influence you?'

Child: 'Yes, it makes me calmer' (F8C5).

Because it is more quiet than a regular school, where there were thirty other children in class. (F4C)

4.3.2. Freedom

A second mechanism is freedom: the freedom to go outside or to visit the animals when children feel that they get angry or agitated. As in the previous mechanism, the space at the farm facilitates this mechanism. Freedom to leave an agitating situation by shortly going outside helps children not to lose control and is clearly distinct from what is possible in a 'normal' school. Freedom does not mean that there are no rules: the farm needs to be a safe environment for all children. Hence, children have to abide by certain norms and rules, such as how to speak to each other. Moreover, children have to do school work and certain chores. Rather, the educational system better fits the personal circumstances and characters of the children, who sometimes feel locked up in a school, and while there are goals, *'expectations are generally lower than at school'* (F6F). Freedom is enabled by the smaller number of children present at the farm as compared to school and the possibilities this creates for personal attention and individual schedules.

Here you really can go outside whenever you want. (F8C3)

When you are angry you can go and see the horses. Or just take a moment. At school you have to continue working and you can't just walk away. (F8C4)

4.3.3. (Individually) fitted education

A third mechanism is that education offered at the farm meets the needs of this specific group of children. Children argue that the pace of education is not as fast as in school, and that the teachers offer support and help, rather than educate. Learning not only happens through books but also in practice, which makes it *'not boring, like in class on a chair'* (F2C1). As mentioned by another child, *'being outside is much nicer and being busy is much better than sitting still'* (F8C1). As a result, children do not always consider these activities *'work'* (F9F). Enjoying better fitted education, children like coming to the farm (although a number of children also stated that they think the education is boring or too easy). This mechanism is facilitated by the personal style of teaching, the individual attention children receive, and their tailored learning trajectories.

There are animals. There are no animals in a regular school. And you don't have to sit still all the time. (F8C5)

At school it really was like, you need to finish this much. Here it is less fast and at your own speed (. . .). They are not teaching, but they just help you when you need it. I really like that. (F9C2)

4.3.4. Feeling accepted

Finally, children feel accepted at the farm. This relates to being around other children in a similar situation, but especially to the teachers who manage to create a sphere of inclusiveness and understanding. Children state that they no longer get bullied, that they can be themselves, that they feel good and connect with other children and teachers. They talk about having friends and enjoying the communal breaks. In other words, children feel at ease and at home at the farm.⁶

The people are really nice. The animals are also really nice. (...) The contact with the supervisors. I also really relate to some other people who come here. To hang out with. (F8C2)

4.4. Outcomes—primary effects

Based on the interviews with eleven children who were able to reflect on how their time at the farm has affected them, and interviews with parents, teachers and farmers, we recognise three main, interrelated, primary outcomes.

4.4.1. Better socio-emotional functioning

Children argue that they have become more at ease, are less easily agitated or angry and that their ways of dealing with others have improved (less 'mean' or snappish, swearing less, more reliable, showing respect). Some state that they have become more independent and that they are better able to stand up for themselves. Parents confirm these socio-emotional effects and contend that those stand out most. They state that their children feel better, are happier, are more relaxed and feel less pressure. More specific effects that parents share are the ability to take a compliment, less compulsive behaviour, an increased ability to reflect, improved dealing with stress, having friends, and showing a healthy day-night rhythm and better appetite. Teachers confirm that several children show less problematic behaviour—they are better able to control their anger or dare to take responsibility.

I mostly see possibilities on the reflective level, how they eventually realise that it's up to them, which leads to a behavioural change, or 'what do I need to change something', daring to think about the future. That's difficult for children when they get here. And taking some responsibility. (F9T)

A socio-emotional effect mentioned in a number of interviews is self-confidence, but whether or not this has increased amongst children is not completely clear. Some parents argue that their children have learned that they are valuable, that they are allowed to share how they feel and that they stand up for themselves. This self-confidence helps them deal with other issues they encounter, and makes them realise that they can take responsibility for change. Teachers confirm that some children gain self-confidence at the farm. A number of children indeed stated that they feel better about themselves. Others, however, argue that their self-confidence has not increased.

4.4.2. Improved learning

Children's opinions on whether their learning abilities have increased vary. Nevertheless, several of them did state that they are more willing to work. Some parents confirm that their children have better learning attitudes, explaining that they are happy and ready to go to the farm in the morning, that they come home happy and talk about their day. For teachers children becoming what they call, 'teachable' (willing to learn), is the most important outcome of the care-education programs. They contend that several children love being at the farm and start feeling better, which results in them enjoying education again. Occasionally, more pleasure in learning leads to a better learning performance: '*Children enjoy coming here, they want to learn something again, they open up*' (F2T).

4.4.3. Seeing a future

Several parents and teachers give an insight in the importance of children enjoying their time at the farm. They explain that their children enjoying things again gives them perspective for the future. This affects the whole family, as one mother explains:

She gets up way too early and she puts her horse riding clothes on, all except her riding boots, and she's really waiting for the taxi to come so she can finally go. I don't hear from her all day, she doesn't app, she doesn't call, only when she comes home she talks about the horses until she goes to bed. (...) She sees a future for herself, and she didn't. She really felt like, let me die. From dying to future is a great step. (F8P)⁷

4.5. Outcomes—secondary effects

The ultimate goal of all care-education programs is for children to go back to school: the farm is not meant to be a permanent place. For several children this is indeed the trajectory, generally after six to twenty-four months at the farm. However, farmers also speak of children who will probably never go back to school, as they are not making enough 'progress' or need treatment rather than or alongside education. Those children are better off in a treatment/therapy/activity centre. Ideally, therefore, if it becomes clear that school is out of reach, these children leave the farm. However, as finding a place for treatment can be difficult—as is finding a suitable school—some children stay at the farm longer than planned.

Six of the children interviewed want to return to school (*I would love to [return to school]!*, F9C3); seven of them do not (the remaining two did not answer the question). Reasons not to want to return are the tension that is associated with school. One child stated: *'[school] is stupid and boring. I can't dig holes there'* (F4C). Parents have mixed feeling about returning to school: while some explain that it may be difficult, three out of five parents interviewed also contend that in the end each child wants to be normal:

In the end x would love to go to a, let's say, normal school. With normal children. You know. He loves being surrounded by animals at the farm, but deep inside he wants to be a normal boy. (F4P)

Table 2 gives the outflow numbers from five farms, showing the development of children who visited the farm during the last one and a half to two years before April 2020. These numbers should be seen as an indication rather than hard data: some of the children have only been visiting the farms for a few months, for instance, and can therefore not yet be expected to have returned to school. The table does show, however, that most children do leave the farm after a few months until a year, and that this is often but not necessarily a school.

It is as of yet unclear whether children who returned to school will be able to stay there. Most children argue that things will be different this time: *'I have a lot of tension and stress, which decreases'* (F8C1). Not all teachers, parents and farmers are so optimistic, however. The transition to school is difficult, also due to the ferocity of the problems. To make for a smooth transition, teachers prepare children by using teaching materials from school, increasing learning time, or teaching in larger groups. Sometimes teachers accompany children the first weeks at school, or they are available for advice. And sometimes, it all just works out fine:

There are still children who - when they arrive, I think, what to do with this child? And then they just go back to school. Obviously, that is what gives us energy, that is our motivation. (F6F)

5. Discussion

5.1. Reflection on findings

The aim of this paper was to describe care-education programs on care farms (including the experiences of children who participate in these programs), in order to better understand why learning on care farms works for some children who drop out of Dutch schools. Our analysis

Table 2. Outflow of five farms (April 2020)

	Farm A	Farm B	Farm C	Farm D	Farm E
Number of children	15	19	44	24	4
Age	9–15	7–14	6–21	6–12	11–13
Boys (%)	73	50	41	96	75
Home institution regular school (%)	0	0	87	29	33
Outflow (%)	50	94	68	75	50
Outflow to school (%)	33	94	47	63	50
Trajectory (time)	4 months— 2 years	2 months— 2 years	8 months— 2 years	6 months— 2 years	7 month—several years

highlights that the contextual elements of the farm environment are important facilitators for some of the mechanisms to take place: the (green) space enables children to feel free, the animals help children feel accepted and the farm itself gives ample opportunity to learn in practice. Also the teachers form an important element of the success of the programs, as they use the farm environment to its full potential, and fit the programs to the children's needs and capacities. Experiencing the practical use of knowledge and skills 'at work' motivates certain children for learning. Additionally, the small scale setting gives opportunities for sufficient attention for the children. In other words, the elements of the farm context and the intervention itself work in tandem to facilitate the mechanisms that lead to the outcomes as recognised in [Figure 1](#). Importantly, while we started our analysis from the interviews with children, interviews with parents, teachers and farmers confirmed our findings.

Our work shows that both care and education play an important role on the farms studied. Children attending the care-education programs are best served with a combination of both since they struggle with a multiplicity of problems. These programs first focus on care, increasing attention for education over time: children need rest and attention before they are ready to learn again. As support for youth is generally organised along two separate lines in the Netherlands—care and education—care farms bringing the two together add a valuable contribution to the Dutch youth care sector. Interestingly, where some of the farmers interviewed focus on education and see themselves as a specific type of school, specialised in and created for children with (learning) difficulties, others state that they first of all offer care. These farmers contend that they do 'not pretend to be a school' (F9T): by creating a connection with education, the farm helps children return to school. This dual relation with education also shows in the finding that some farms use books from school, so as to continue regular learning trajectories as much as possible, while others create their own learning materials in order not to remind the children of school, which they have such bad experiences with. This variety highlights a diversity of initiatives differing in focus, typical for the development of a new pioneering sector (Hassink et al., 2020; Hassink, De Bruin, Berget, & Elings, 2017).

Several authors who write about outdoor learning interventions (Sjöblom & Svens, 2019; Taniguchi, Freeman, & Richards, 2005) stress the importance of reflection for the learning process. Reflection is indeed part of the educational programs at the farms studied, either on a daily or on a weekly basis, and teachers take time to reflect with children on their behaviour. One of the teachers interviewed (F9T) stated, for instance, that when the children run into trouble at the farms, this is used as a learning moment. Reflection did not appear as a main element or mechanism from our material, however. A likely explanation for this is that the value of reflection may not be easily recognised by the children, especially as it is difficult for them to reflect on their learning process in the first place: recall that some of the children did not recognise learning in practice either.

As we were looking to understand why learning on care farms may be beneficial for some children, our interviews focused on how care farms can help children flourish, and in our analysis we emphasized supporting mechanisms. Our material also shows, however, two main challenges for care-education programs. The first relates to the fact that these programs bring several children with problematic behaviour together. Notes made during observations revealed various instances in which children performed provocative behaviour, trying to incite others to join them, and other children copying such offensive behaviour. The second challenge is that while several children do indeed flourish on the farms and go back to school, several teachers shared that change can be slow and unpredictable. They argue that the behaviour of some children hardly improves: especially a negative self-image is hard to change. This is line with the findings of Price (2019), who also concluded that changes in self-awareness were less observed than changes in relationship skills, responsible decision-making, self-management and social awareness. Interviewees contend that for some children an educational farm is not suitable, especially as some of them need more therapy than the farms can offer. Indeed, the farms generally accept children of whom a certain development is expected. This implies that we were (more) likely to find positive effects of a stay at the farm.

5.2 Scientific implications

We have used the CIMO-model for our analysis as it allows taking the context into account, which is essential for context-specific evaluations. The model has helped us understand the various elements of education and care at the farm and how they relate. Our work thus complements the existing bank of knowledge on how the interplay between context and key intervention elements can trigger certain mechanisms and outcomes, as of yet an under-investigated research area. Our study also shows that this interplay is inherently complex: the implementation of intervention elements and triggered mechanisms and outcomes strongly depends on the contextual factors of the farm, children and teachers. As such, researchers studying different outdoor learning interventions may find different mechanisms (or similar, for that matter). Nevertheless, the results of our study can be used to further unravel the effectiveness and effective elements of various outdoor learning interventions on care farms.

We encourage other researchers to use more longitudinal and observational approaches and to follow children after leaving the farm. We suggest interviewing children who visited educational farms in their pasts, and reflecting on their experiences in retrospect. These experiences could be supplemented with insights into the learning trajectories of these children: did they stay in school, for instance, or drop out again at a later stage? We also recommend evaluating the outdoor learning intervention on its effectiveness using both objective measures, such as days until return to school or attendance rates, and subjective measures. Self-esteem and social and emotional learning skills for instance, can be studied using self-reported valid and reliable questionnaires (Coelho, Sousa, & Marchante, 2015; Lawrence, 1981). Finally, in this paper we excluded contextual elements like collaboration with schools, as we chose to focus on a more restricted farm-context. In future studies it would be insightful to include challenges around collaboration, funding and legitimacy for this new farm service, so as to better understand the potential of this new sector (Hassink et al., 2020).

6. Conclusions

Educational care farms provide education to children with complex problems who dropped out of school. These children need not only education but also care. In this paper we used the Context-Intervention-Mechanism-Outcome model as a tool to unravel mechanisms that may explain why learning and care on farms works for some of these children. Analysing interviews with children, but also with their parents, the teachers and the care farmers highlighted four important, interrelated, elements of this outdoor learning intervention. First, education in a farm environment offers children rest. This relates both to the farm itself (animals present, green environment) and to the educational programs offered (smaller groups, lack of pressure, a combination of care and education). Second, children experience freedom at the farm. The farm environment offers children the possibility to take a break when things become too much, and to go outside or spend time with the animals to release pressure and stay (or become) calm. Freedom also results from an atmosphere in which children are stimulated to be themselves and in which there is a certain acceptance of their behaviour, facilitated by the small groups and the ample personal attention. Third, children enjoy education that is fitted to their needs and capacities, so that they gain positive experiences. This mechanism is supported by the farm environment—offering opportunities to learn in practice, outside, while working with animals or machines and to learn by doing—and by the teachers and their personal teaching styles. Finally, as the children who visit the farms have all dropped out of school (or have serious problems staying in school), children feel that they fit in, a feeling that is being strengthened by the individual attention and supportive attitudes of the teachers and the safe environment they provide.

We conclude that both the specific farm environment and the educational programs in which there is more time and attention for the individual children than in a regular school environment, are essential in making this outdoor learning intervention work. Children are given the time and space to work on their socio-emotional issues: only then there is time for (cognitive) learning. Indeed, the

most important outcome of the care-education programs are an improved socio-environmental functioning. This finding complements earlier work by Veerman and colleagues (2016), who found that outdoor learning interventions on care farms are a suitable way to match the educational system to the needs and capacities of children with various characteristics.

Notes

1. Vera Buunk and Lana Plug.
2. A number of these farms are the same as those mentioned in table 1. However, anonymity prevents us from matching the farms.
3. Teachers explain that the youngest children are 4 to 5 years old but that these are exceptions.
4. 'F9' means Farm 9: the number corresponds with the numbers in table 1. P stands for parent, C for child, T for teacher and F for farmer.
5. Not all children care much for the animals. Farmers F8F1 and F8F2 stated that most children do not have affinity with the animals and do not do much with them, because it relates to something they 'have to'. That said, children still enjoy being outside or looking at the animals, which does bring them rest.
6. Important to note is that the atmosphere is not only positive. Some children clearly expressed that they did not like (certain) other children, experienced their behaviour as difficult to deal with or stated that they are being bullied—or bully others: *Sometimes the children drive me crazy (. . .) because they are very wild.* (F8C4); *I always felt very good at the farm, but that decreased when the new boy arrived.* (F5C2). One parent explained that small groups leave little opportunity for making friends. Observations confirmed that while in some instances all children were working quietly, education can also be chaotic, as some children show difficult behaviour and children may affect each other. As an example, during one observation a child got angry, started screaming and swearing and was thumping on the classroom windows.
7. As Vermulst, Kroest., De Meyer, Nguyen, and Veerman (2015) argue, taking care of a troubled child can be stressful. One outcome of care-education programs not discussed in this paper is a (temporary) relieve from that stress. Not only does the child have a place to go for a few days a week, when the child is actually feeling better this can make a huge difference, as this quote illustrates.

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